UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,465	02/22/2002	Edward Robert Perry	PERRY-010	1060

7590 10/12/2007

Kristofer E Halvorson
The Halvorson Law Firm P C
1751 E Baseline Rd Ste 130
Gilbert, AZ 85233

EXAMINER	
PRONE, JASON D	

ART UNIT	PAPER NUMBER
3724	

MAIL DATE	DELIVERY MODE
10/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/081,465	PERRY, EDWARD ROBERT	
	Examiner	Art Unit	
	Jason Prone	3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *1-16 and 23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 17, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (Fig. 3) (from now on known as aapa3) in view of Ishizuka (6,098,609).

In regards to claim 17, aapa3 discloses the invention including a saw blade (20), the saw blade being corrugated with substantially uniform thickness and including raised (21) and lowered surfaces (22), the lower surfaces being parallel to and spaced laterally and longitudinally of the raised surfaces (21, 22), and transition portions connecting the raised and lowered surfaces (Fig. 3).

In regards to claims 18 and 20, aapa3 discloses the transition portions are at an angle to the raised and lowered surfaces (all items are at an angle with respect to other items) and the raised and lowered surfaces are substantially flat (21, 22).

However, with regards to claim 17, aapa3 fails to disclose a matrix for encapsulating large and small abrasive particles in the matrix and the small abrasive particles being encapsulated inside the matrix in a high-density concentration.

Ishizuka teaches it is old and well known in the art of cutting wheels to incorporate a matrix (2) for encapsulating large and small abrasive particles in the

matrix (3 and Column 7 lines 27-30) and the small abrasive particles being encapsulated inside the matrix in a high-density concentration (Fig. 1). Therefore it would have been obvious to one of ordinary skill in the art, at the time of the invention to have provided aapa3 with the matrix encapsulating abrasive particles, as taught by Ishizuka, to allow for more efficient saw blade end for cutting hard materials and because all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective function and the combination would have yielded predictable results.

3. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over aapa3 in view of Ishizuka. aapa3 in view of Ishizuka disclose the invention but remain silent with respect to the angle at which the transition portions interacts with the raised and lowered surfaces. Therefore, aapa3 in view of Ishizuka fail to disclose the transition portions are at a 45° angle to the raised and lowered surfaces.

However, it is noted that there are a limited number of angle choices available to a person of ordinary skill in the art for connecting the raised and lowered surfaces of aapa3. In this regard, it is noted that it would have been obvious for one of ordinary skill in the art to try a transition portion angle of 45°. Therefore it would have been obvious to one of ordinary skill in the art, at the time of the invention to have provided aapa3 in view of Ishizuka with a transition portion angle of 45° because a person of ordinary skill has good reason to pursue the known options within his/her grasp. If this leads to the anticipated success, it is likely the product is not innovation but of ordinary skill and common sense.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over aapa3 in view of Ishizuka as applied to claim 17 above, and further in view of Hagan (5,997,597). aapa3 in view of Ishizuka disclose the invention but fail to disclose the small abrasive particles are a different material than the large abrasive particles. In view of the fact that the abrasive materials of Hagan will not all have the same size allowing some of the pieces to have larger status and some of the piece to have a small status, Hagan teaches the use of two different abrasive materials (abstract). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided aapa3 in view of Ishizuka with two different types of abrasive material, as taught by Hagan, to allow for improved tool life and because all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective function and the combination would have yielded predictable results.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over aapa3 in view of Ishizuka. aapa3 discloses the invention including a saw blade (20), the saw blade having a corrugated shape of substantially uniform thickness and including raised (21) and lowered surfaces (22), the lower surfaces being parallel to and spaced laterally and longitudinally of the raised surfaces (21, 22), and transition portions connecting the raised and lowered surfaces (Fig. 3).

aapa3 fails to disclose a matrix material, large and small abrasive particles encapsulated in the matrix material, and the small particles being between and around the large particles and in a higher density by volume than the larger particles.

Ishizuka teaches it is old and well known in the art of cutting wheels to incorporate a matrix material (2) for encapsulating large and small abrasive particles in the matrix material, (3 and Column 7 lines 27-30), and the small particles being between and around the large particles and in a higher density by volume than the larger particles (3). Therefore it would have been obvious to one of ordinary skill in the art, at the time of the invention to have provided aapa3 with the matrix encapsulating abrasive particles, as taught by Ishizuka, to allow for more efficient saw blade end for cutting hard materials and because all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective function and the combination would have yielded predictable results.

Also, aapa3 in view of Ishizuka appears to disclose the depth of the corrugations is greater than the thickness of the corrugated shaped blade by a ratio of greater than 3 to 1 in Figure 3, however, aapa3 in view of Ishizuka does not actually disclose this ratio only a Figure that might not be to scale. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the depth of the corrugations be greater than the thickness of the corrugated shaped blade by a ratio of greater than 3 to 1, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided Ishizuka with corrugations with a depth greater than the thickness of the corrugated

shaped blade by a ratio of greater than 3 to 1 to allow for the corrugations to have a specific shape and/or contain a desired amount of abrasive material. Also, it is noted that there are a limited number of depth choices available to a person of ordinary skill in the art. In this regard, it is noted that it would have been obvious for one of ordinary skill in the art to try corrugations with a depth greater than the thickness of the corrugated shaped blade by a ratio of greater than 3 to 1. Therefore it would have been obvious to one of ordinary skill in the art, at the time of the invention to have provided aapa3 in view of Ishizuka with 3 to 1 ratio because a person of ordinary skill has good reason to pursue the known options within his/her grasp. If this leads to the anticipated success, it is likely the product is not innovation but of ordinary skill and common sense.

Response to Arguments

6. Applicant's arguments with respect to claims 17-22 have been considered but are moot in view of the new ground(s) of rejection.

7. With regards to applicant's arguments that Ishizuka fails to disclose small and large particles. Ishizuka clearly discloses a layer of 60/80 mesh diamond particles. As previously stated the terms "small" and "large" do not disclose any specific structure and are relative terms. In this case, the "largest possible particles" that falls through a 60 mesh but not an 80 mesh is considered the large abrasive particle. All the remaining particles that pass through the 60 mesh but not the 80 mesh and are smaller relative to the "largest possible particles" are considered the smaller particles. In this there can only be one size for the large particles and with all remaining sizes for the smaller

particles. In light of this, the small particles would clearly outnumber and be in-between the large particles.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Prone whose telephone number is (571) 272-4513. The examiner can normally be reached on 7:30-5:00, Mon - (every other) Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer D. Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 10, 2007

Jason Prone

Patent Examiner
Jason Prone
Art Unit 3724
T.C. 3700